

CLAIMS

1. A radiation-curable liquid resin composition comprising:
 - 5 (A) 20-90 wt% of a urethane (meth)acrylate oligomer, and
 - (B) 1-35 wt% of
 - a monomer shown by the following formula (1),
$$\begin{array}{c} \text{R}^1 \\ | \\ \text{H}_2\text{C}=\text{C}-\text{C}(=\text{O})-\left(\text{OCHCH}\right)_n\text{O}-\text{C}=\text{CH}_2 \\ | \quad | \\ \text{R}^2 \quad \text{R}^3 \end{array} \quad (1)$$
wherein R¹ represents a hydrogen atom or a methyl group, R² and R³ individually represent a hydrogen atom or an alkyl group having 1-4 carbon atoms, R⁴ represents a hydrogen atom or a methyl group, and n represents an integer of 1-6, or
 - a monomer including a hydroxyl group.
2. The radiation-curable liquid resin composition according to claim 1, wherein the urethane (meth)acrylate oligomer is obtained by reacting a polyol compound (a), a polyisocyanate (b), and a hydroxy-functional ethylenically unsaturated monomer (c).
3. The radiation-curable liquid resin composition according to claim 1, wherein 10-80 wt% of the urethane (meth)acrylate oligomer is obtained by reacting a polyisocyanate compound (b) and a hydroxy-functional ethylenically unsaturated monomer (c).
4. The radiation-curable liquid resin composition according to claim 3, the composition further comprising a urethane (meth)acrylate oligomer obtained by reacting a polyol compound (a), a polyisocyanate (b), and a hydroxy-functional ethylenically unsaturated monomer (c).
5. The radiation-curable liquid resin composition according to claim 3 or claim 4, wherein the oligomer obtained by reacting a polyisocyanate compound (b) and a hydroxy-functional ethylenically unsaturated monomer (c) is an oligomer obtained by reacting 2-hydroxyethyl (meth)acrylate and 2,4-tolylene diisocyanate.
6. The radiation-curable liquid resin composition according to any one of claims 1-5, wherein the monomer (B) is chosen from the group consisting of 2-(2'-vinyloxyethoxy)ethyl (meth)acrylate and 2-vinyloxyethyl (meth)acrylate.
7. The radiation-curable liquid resin composition according to any one of claims

- 1-5, wherein the monomer (B) is chosen from the group consisting of 2-hydroxyethyl (meth)acrylate, 2-hydroxypropyl (meth)acrylate, 4-hydroxybutyl (meth)acrylate, and 4-hydroxycyclohexyl (meth)acrylate
8. The radiation-curable liquid resin composition according to any one of claims
5 1-7, further comprising a reactive diluent (C), wherein (C) is not covered by the definition of component (B).
9. The radiation-curable liquid resin composition according to claim 8 comprising 1-33 wt% of reactive diluent (C).
10. The radiation-curable liquid resin composition according to any one of claims
10 1-9, wherein the composition has a viscosity of 1.0-6.0 Pa·s at 25°C.
11. Use of the radiation-curable liquid resin composition according to any one of claims 1-10 as a primary coating, secondary coating, ink composition or matrix material on an optical glass fiber.
12. A coated optical fiber comprising a glass optical fiber having a primary coating,
15 a coated optical fiber comprising a glass optical fiber having a primary coating and a secondary coating, a coated optical fiber comprising a glass optical fiber having a primary coating, a secondary coating and an upjacketing coating, a coated optical fiber comprising a glass optical fiber and a single coating, a coated optical fiber comprising a glass optical fiber, a single coating and an
20 upjacketing coating, and each coated fiber optionally having an ink composition applied thereon, and to an optical fiber ribbon comprising at least two of said coated and optionally inked optical fibers wherein at least one of said coating or composition is derived from a radiation-curable composition as described in any one of claims 1-10.
- 25 13. Coated and optionally inked optical fiber comprising a glass optical fiber having a primary coating, a secondary coating, and optionally an ink composition applied thereon, wherein at least one of said coatings or ink compositions is derived from a radiation-curable composition according to any one of claims 1-10.
- 30 14. An optical fiber ribbon comprising a plurality of coated and optionally inked optical fibers according to claim 12 or claim 13 held together by a matrix material.
15. An optical fiber ribbon comprising a plurality of coated and optionally inked optical fibers held together by a matrix material, wherein the matrix material is derived from a radiation-curable resin composition according to any one of claims 1-10.
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